## REMARKS

1. Applicant thanks the Examiner for the Examiner's comments, which have greatly assisted Applicant in responding.

2. **35 USC §102.**

The Examiner rejected Claims 1, 3, 8-13, 17, 25, 26, 28-35, and 37 as being anticipated by Aleia *et al* (Aleia) US Patent No. 5,991,733 and as discussed in the last office action (Paper No. 14).

Applicant respectfully disagrees.

Independent Claim 1 appears as follows:

1. (currently amended) A computer implemented method of predicting the likelihood of collecting on a delinquent debt on an account, the method comprising:

storing a predictive model of debt collection likelihood generated using historical data of delinquent debt accounts, the collection methods used in each account, and the success of the collection methods in each account;

storing a collectors' notes model, said model representing different types of notes' subject matter as context vectors determining a collectors' notes word space;

wherein said collectors' notes model is generated using said historical data of delinquent debt accounts;

receiving data of a currently delinquent debt account;

transforming collectors' notes of said currently delinquent debt account into a document context vector and performing any of:

comparing said document context vector against context vectors of said collectors' notes model to determine a subject matter similarities result and using said result as input into said predictive model; and

using components of said document context vector expressed in context vector eigenbasis as input into said predictive model;

selecting a collection method; and

generating a signal indicative of the likelihood of collecting on the currently delinquent debt by applying the data of the currently delinquent debt account and the selected collection method to the predictive model[[.]];

using said signal indicative of the likelihood of collecting on the currently delinquent debt for, but not limited to, prioritizing collection resource expenditures.

Applicant has amended Claim 1 by incorporating building a context vector model and using the context vector model for current debt collection as shown in the flow chart of Fig. 4 and in the associated text in the Specification. Support follows:

(On page 22, line 17 through page 23, line 4 (emphasis added):

Thus, an optimized debt collection management system **applies more resources to collection efforts on the accounts of unemployed debtors, and fewer**

**r sourc s on bankruptcy accounts.** In order to be able to make such an optimization decision, **the system predicts accounts containing phrases like "John lost job" or "Jane got downsized," as well as many other variants referring to unemployment, to be worthy of collection resource expenditures.** Conversely, other accounts containing phrases referring to imminent bankruptcies will not indicate that an expenditure of collection resources is valuable. It will be evident to one of skill in the art that various other debtor categories may be tracked through the use of context mining of collector's notes.

(On page 23, lines 5-13)

Fig. 4 is a flowchart of a process for context vector generation in an embodiment of the present invention. In one embodiment, context vector generation is performed by context vector software that operates on the raw collectors' notes text. **Using historical delinquent debt account information, a model of collectors' notes is built mathematically, representing different types of notes' subject matter as "cluster centroid vectors" in the word space of collectors' notes. Current delinquent debt accounts' collectors' notes are then mathematically transformed into vectors that are compared against the model's centroid vectors to determine subject matter similarities. The mathematical representation of a current debt account's collectors' notes is used as an input into a delinquent debt predictive model.**

(On page 30, lines 7-17)

The $N$ dot products $a_i$ define how close each document is to each cluster vector, **and these dot products are used as inputs into the predictive model.** As each cluster contains documents of similar context, the dot product of a document vector $v_i$ with each of the $N$ cluster vectors $C_i$ quantifies the cluster vector that the document most resembles. A dot product close to 1.0 quantifies that the document contains very similar contextual information to the cluster vector, whereas a dot product close to 0.0 represents nearly no shared information. These projections are used as inputs 438 into the predictive model.

In another embodiment, **the $d$ components of the document context vector $v_i$ expressed in the context vector eigenbasis** (i.e., the projections along the subspace defining each context vector) **may be used as inputs into the predictive model.** This embodiment does not use cluster centroid grouping of document vectors.

Therefore, because the prior art of record does not teach every element of Claim 1, Applicant is of the opinion that Claim 1 overcomes the 35 USC Section 102(e) rejection. Hence, the dependent claims of Claim 1 are deemed to overcome the 35 USC Section 102(e) rejection. Accordingly, because Claim 1 and its dependent claims are deemed in allowable condition, Applicant respectfully requests that the Examiner withdraw the rejection under 35 USC Section 102(e).

3. **35 USC §103.**

Th Examiner rejected Claims 2, 3-7, 14-16, 18-24, 27, 36, and 38-51 as being unpatentable over Aleia under 35 USC §103(a) as discussed in paragraph 5 of the last office action (Paper No. 14).

Regarding Claims 35-36, 38-41, the Examiner stated on page 7, first and second paragraphs, that Office Notice is taken that "... using context vector methodology by determining co-occurrence statistics of terms contained in the collectors' notes are old and well known in the art."

Applicant respectfully disagrees. Applicant respectfully requests that the Examiner provide evidence. Further, Applicant is of the opinion that the Examiner is using the benefit of hindsight which is improper.

The Examiner further stated that the "... coding, representative and mathematical models speed up the analysis and make the analysis more objective" and the "... combination of the disclosures taken as a whole suggests creditors would have benefited from speeding up the analysis and making them more objective by using coding, representation and mathematical models in the analysis."

Applicant respectfully disagrees. Applicant is of the opinion that base Claim 1 as amended further clarifies the non-obviousness of the claimed invention and especially that there is no teaching or motivation in the prior art of record to modify the prior art of record to result in the claimed invention, because the motivation provided by the Examiner is insufficient to satisfy all features of base Claim 1 as amended.

Therefore, in view of the argument hereinabove, Applicant is of the opinion that Claims 2, 3-7, 14-16, 18-24, 27, 36, and 38-51 are in allowable condition. Accordingly, Applicant respectfully requests that the Examiner withdraw the rejection under 35 USC §103(a).

4. It should be appreciated that Applicant has elected to amend the Claim 1 solely for the purpose of expediting the patent application process in a manner consistent with the PTO's Patent Business Goals, 65 Fed. Reg. 54603 (9/8/00). In making such amendment, Applicant has not and does not in any way narrow the scope of protection to which Applicant considers the invention herein to be entitled. Rather, Applicant reserves Applicant's right to pursue such protection at a later point in time and merely seeks to pursue protection for the subject matter presented in this submission.

Respectfully Submitted,

Michael A. Glenn,

Reg. No. 30,176

Customer No. 22862